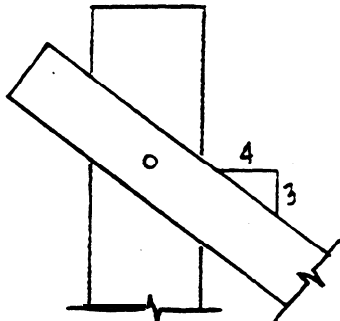
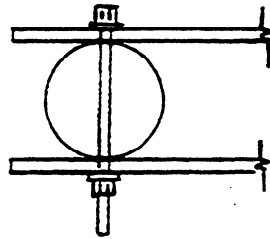


## EXAMPLE NO. 2 CAPACITY OF BOLTED JOINTS

THE CONTRACTOR'S FALSEWORK PROPOSAL SHOWS THE FOLLOWING:



ELEVATION VIEW



TOP VIEW

POST                      12"  $\phi$  POLE  
DIAGONAL BRACE      2 EA 2x8 S4S  
CONNECTOR            3/4"  $\phi$  BOLT  
2% DEAD LOAD CONTROLS HORIZONTAL  
DESIGN FORCE

### DETERMINE THE CONNECTION CAPACITY

1. CHECK BOLT CAPACITY IN THE SIDE MEMBER (2x8) FROM SECT. 4-3.02 OF FW MANUAL, ENTER CHART FOR A MEMBER 2x THICKNESS OF SIDE MEMBER.

$$2 \times 1.5" = 3" \quad P = 2630\# \quad (\text{SIDE MEMBER IS AXIALLY LOADED, } \therefore \text{PARALLEL TO GRAIN})$$

FROM SECT. 4-3.02 OF FW MANUAL, CONSIDER 3 MEMBER JOINT TO BE 2 INDEPENDENT 2 MEMBER JOINTS AND USE 0.75 FOR SINGLE SHEAR.

$$2 \times 0.75 \times 2630 = \underline{3945\#}$$

2. CHECK BOLT CAPACITY IN THE MAIN MEMBER (12" POLE)

$$\text{EQUIVALENT SQUARE SECTION WIDTH} = \sqrt{\pi R^2} = \sqrt{\pi (6^2)} = 10.6"$$

FROM SECT. 4-3.02 OF FW MANUAL, FOR MEMBER SIZES 9 1/2" THRU 12",  $P = 2860\#$   $Q = 1640\#$

USE HANKINSON'S FORMULA

$$\theta = \tan^{-1} \frac{4}{3} = 53.13^\circ \quad R = \frac{2860(1640)}{2860 \sin^2 53.13^\circ + 1640 \cos^2 53.13^\circ} = 1938\#$$

CONSIDER 3 MEMBER JOINT AS 2 INDEPENDENT 2 MEMBER JOINTS

$$2 \times 0.75 \times 1938 = \underline{2907\#}$$

3.  $2907\# < 3945\#$   $\therefore$  MAIN MEMBER CONTROLS

4. CONNECTION CAPACITY =  $1.25 \times 2907\# = 3634\#$

2% DEAD LOAD CONTROLS HORIZONTAL DESIGN FORCE,  
 $\therefore$  1.25 LOAD DURATION FACTOR